

Claims

[c1] What is claimed is:

1. A liquid crystal display (LCD) module, comprising:
a housing comprising a plurality of openings formed in a lower surface of said housing;
an LCD panel formed within said housing, said LCD panel comprising a display area, a peripheral circuit formed on said LCD panel, and a plurality of driver integrated circuits formed in the peripheral circuit area of the LCD panel; and
a flexible printed circuit board (FPCB) formed on the edge of the peripheral circuit area of the LCD panel, the FPCB having an extending portion and a plurality of light emitting diodes (LEDs) formed below the lower surface of the extending portion;
wherein the LEDs of the FPCB would be inset into corresponding openings of the housing when the extending portion of the FPCB crosses the edge of the LCD panel and being deflexed to the lower surface of the housing.

[c2] 2. The LCD module of claim 1 wherein the housing is a rectangular-platy reflect-frame.

[c3] 3. The LCD module of claim 1 wherein the LCD panel is a

thin film transistor LCD(TFT-LCD) panel.

- [c4] 4. The LCD module of claim 1 wherein the FPC board comprises a copper clad laminate or tape carrier package.
- [c5] 5. The LCD module of claim 1 wherein each of the LEDs is a backlight source of the LCD panel used to illuminate the LCD panel.
- [c6] 6. The LCD module of claim 1 wherein each driver integrated circuit comprises a gate driver integrated circuit or source driver integrated circuit.
- [c7] 7. The LCD module of claim 1 further comprising a light-guide plate, a diffusion sheet, or an optical thin film formed between the LCD panel and the housing.
- [c8] 8. The LCD module of claim 1 further comprising a plurality of electrical components formed below the lower surface of the FPC.